

Atty Dkt. No.: 10991975-1  
USSN: 09/754,687

### CLAIMS

**Claim 1-5 (Cancel)**

6. **(Currently Amended)** A method for selectively separating components having a molecular weight below a threshold value from a multi-component fluidic sample, said method comprising:
- introducing said multi-component fluidic sample into a micro-fluidic device having a fluid flow path and at least one micro-valve comprising a phase reversible gel material having a first porosity that can be modulated in response to an applied stimulus to provide a second porosity; and
  - contacting said introduced multi-component fluidic sample with said micro-valve under conditions sufficient for said components of said multi-component fluidic sample having a molecular weight below said threshold value to at least move into said micro-valve while the remaining components of said multi-component fluidic sample having molecular weights above said threshold level are excluded from entering said micro-valve and thereby remain outside of said micro-valve;
- wherein said method comprises modulating the porosity of said micro-valve by applying said stimulus to said gel having said first porosity to provide said gel with said second porosity that selectively allows sample components that have a molecular weight below said threshold value to at least move into said micro-valve while excluding entry into said micro-valve of sample components having molecular weights above said threshold value components having a molecular weight below a threshold value are selectively separated from said multi-component fluidic sample.
7. **(Original)** The method according to Claim 6, wherein said phase reversible material is a phase reversible polymer.
8. **(Original)** The method according to Claim 6, wherein said phase reversible material is thermo-reversible.

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9. **(Cancel)**
10. **(Currently Amended)** The method according to Claim 6, wherein said stimulus is a change in temperature.
11. **(Original)** The method according to Claim 6, wherein said threshold value is about 1000 daltons and said method is a method of desalting said multi-component fluidic sample.
12. **(Currently Amended)** A method for concentrating a multi-component fluidic sample with respect to at least one constituent thereof, said method comprising:
- introducing said multi-component fluidic sample into a micro-fluidic device having a fluid flow path and at least one micro-valve comprising a phase reversible gel material having a first porosity that can be modulated in response to an applied stimulus to provide a second porosity; and
  - contacting said introduced multi-component fluidic sample with said micro-valve under conditions sufficient for components of said multi-component fluidic sample having a molecular weight below a threshold value to at least move into said micro-valve while the remaining components of said complex fluidic sample having molecular weights above a threshold level are excluded from entering said micro-valve and thereby remain outside of said micro-valve;
  - wherein said method comprises modulating the porosity of said micro-valve by applying said stimulus to said gel having said first porosity to provide said gel with said second porosity that selectively allows sample components that have a molecular weight below said threshold value to at least move into said micro-valve while excluding entry into said micro-valve of sample components having molecular weights above said threshold value, and further wherein said multi-component fluidic sample is concentrated with respect to at least one constituent thereof.

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13. **(Original)** The method according to Claim 12, wherein said phase reversible material is a phase reversible polymer.
14. **(Original)** The method according to Claim 12, wherein said phase reversible material is thermo-reversible.
15. **(Cancel)**
16. **(Currently Amended)** The method according to Claim 12 ~~15~~, wherein said stimulus is a change in temperature.
17. **(Currently Amended)** A kit for use in selectively separating at least one component from a multi-component fluidic sample, said kit comprising:
- (a) a micro-fluidic device having a fluid flow path and at least one micro-valve comprising a phase reversible material; and
  - (b) at least one of:
    - (i) instructions for practicing the method of Claim 6 ~~4~~; and
    - (ii) means for obtaining instructions for practicing the method of Claim 6 ~~4~~; wherein said instructions and means for obtaining the same are recorded onto a substrate.
18. **(Original)** The kit according to Claim 17, wherein said substrate is a printable substrate.
19. **(Original)** The kit according to Claim 17, wherein said substrate is an electronically recordable substrate.
20. **(Original)** The kit according to Claim 17, wherein said kit further comprises a phase reversing means.